

ORIGINAL

# SWIDLER BERLIN SHEREFF FRIEDMAN, LLP

THE WASHINGTON HARBOUR  
3000 K STREET, NW, SUITE 300  
WASHINGTON, DC 20007-5116  
TELEPHONE (202) 424-7500  
FAX (202) 424-7645  
WWW.SWIDLAW.COM

ELIOT J. GREENWALD  
DIRECT DIAL (202) 424-7809

NEW YORK OFFICE  
THE CHRYSLER BUILDING  
405 LEXINGTON AVENUE  
NEW YORK, NY 10174  
(212) 973-0111 FAX (212) 891-9598

September 27, 2000

RECEIVED

ORIGINAL

SEP 27 2000

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

EX PARTE OR LATE FILED

VIA COURIER

Magalie Roman Salas, Esq.  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: **SLIDE PRESENTATION FROM EX PARTE MEETING**  
CC Docket No. 94-102  
RM-8143  
Compatibility with Enhanced 911 Emergency Calling Systems

Dear Ms. Salas:

On September 14, 2000, George Marble, Vice President, Location Services, Grayson Wireless Division of Allen Telecom Inc. ("Allen") and I had an *ex parte* meeting with representatives of the Policy Division of the Wireless Telecommunications Bureau regarding the above-referenced docket. Representing the Policy Division were Kris A. Monteith, Chief, Blaise A. Scinto, Deputy Chief, Daniel F. Grosh, Martin D. Liebman, Ronald F. Netro, Patrick E. Forster, and Wendy Austrie. We filed a notice of *ex parte* meeting on September 15, 2000.

Enclosed herewith is a copy of the slide presentation that was used at the meeting. The slide presentation shows the methodology and results of independent field trials of Allen Telecom's Geometrix wireless location system conducted in Lexington, Kentucky by Verizon Technology Organization (formerly GTE Laboratories) using the test plan methodology established by the CDMA Development Group ("CDG"). Over 4,000 position data points were established using over

No. of Copies rec'd  
List ABCDE

0 + 4

Magalie Roman Salas, Esq.

September 27, 2000

Page 2

60 calling environment scenarios in hundreds of locations in urban, suburban and rural settings over a two-week period. Accuracy of better than 100 meters was achieved in 67% of the cases and better than 300 meters in 95% of the cases, meeting the FCC's Phase II accuracy requirements.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Eliot J. Greenwald', with a long horizontal flourish extending to the right.

Eliot J. Greenwald

cc: Kris A. Monteith  
Blaise A. Scinto  
Patrick E. Forster  
Daniel F. Grosh  
Martin D. Liebman  
Ronald F. Netro  
Wendy Austrie  
George Marble

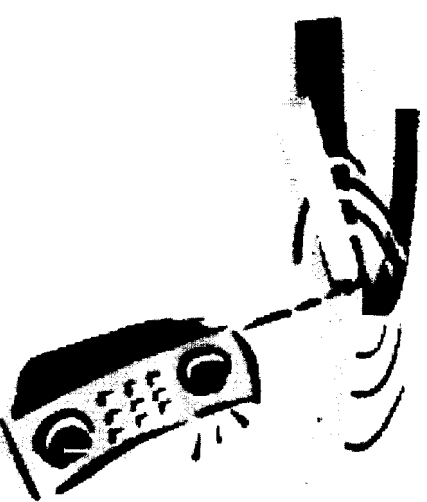
# Allen Telecom Inc.

CDMA Wireless Location Field Trial Report

Federal Communications Commission

Wireless Telecommunications Bureau

September 14, 2000



## Geometrix™ Timeline

1993: First Generation of Geometrix™ Begun at Raytheon.

1996: First Successful Trial. Millions of Locations Determined.

1997: Product and Core Group of Engineers Acquired by Allen.

1Q2000:

- Announced Geometrix Commercial Availability.
- Began Advertising/Promotional Campaign.
- Conducted Live Public Demonstration of Multi-Protocol System Operation at CTIA Conference in New Orleans.

2Q2000- Present: Carrier Field Trials. Demonstration Network.

4Q2000: High-Volume System Manufacturing (Virginia Plant)

1Q2001: Systems Implementation

# Wireless Field Trials

Field Trials With Three Major Wireless Carriers Throughout U.S.

CDMA, TDMA, AMPS

Approximately 100 Base Stations

Thousands Km sq Coverage

Urban, Suburban, Rural

All Test Calls Using Commercial Handsets. Normal Wireless Network Operation, Including Power Control

Thousands of Test Calls from Hundreds of Locations (Fixed and In-Motion)

Geometrix-determined Positions Checked Against DGPS

Verizon Wireless

**Lexington, Kentucky**

**CDMA**

**1,200 Km sq Coverage Area**

**Urban, Suburban, Rural**

**Base Stations Equipped With Geometrix  
Wireless Location Sensors**

**Conducted by Verizon Technology  
Organization**

**Used CDG Test Plan**

## Verizon Technology Organization (VTO) Test Plan

Conducted by Verizon Technology Organization  
(Formerly GTE Laboratories)

Followed CDMA Development Group (CDG) Test Plan  
4,000+ Position Data Points

CDG Testing Scenario Classes, 60+ Scenarios, 3  
Sites/Scenario, 40 Location Tests per Site

Test Calls From Unmodified Commercial Handsets,  
Normal Network Operations, Existing Base Station  
Antennas

Two-week Test Period (July 5<sup>th</sup> -21<sup>st</sup>, 2000)

All test locations were selected by VTO

Allen had no pre-knowledge of locations

# CDG Scenarios Used in Tests

60+ CDG Scenarios Used in Tests

3 Examples of Each Scenario/40 Tests per Example

## Suburban Examples

Residential Sidewalk

Shopping Mall

2-3 story office building, bottom floor

Residential 2 lane street: inside car 15-40mph; inside car stationary

Warehouse site, inside metal roofed

Parking Garage, middle floor inside/ outside car stationary

Shopping Plazas, indoor/outdoor stationary

## Highway/Driving Examples

Heavy traffic

30-40 mph

Max Speed Limit

## Urban Examples

Indoor (office building, parking garage, residential, etc.)

Outdoor (off-street, sidewalk, alley, walking, stationary, etc.)

## Rural Examples

Rolling, Flat, Dense Foliage, Clear View, etc.

Inside, Outside, Moving, Stationary, etc.

April 15, 2012

CDG Test Plan/OET Bulletin #71 calls for test data to be appropriately weighted

Three weighting scenarios applied:

- (1) Weighting by wireless 911 call origin area distribution
- (2) Weighted by morphological mix (urban, suburban, rural)
- (3) Equal weighting for all morphological classes

## Results

Weighting Method	67%	95%
E911 Call Distribution	<100 meters	<300 meters
Area Distribution	<100 meters	<300 meters
Equal Distribution	<100 meters	<300 meters

## Geometrix Meets FCC Accuracy Standards

FCC has not clearly defined how location systems should be measured to verify accuracy.

Carriers and vendors should make best efforts to interpret the FCC's decision. CDMA Development Group (CDG) has provided a Test Plan.

Allen Telecom's Geometrix was rigorously tested by a major carrier using CDG Test Plan.

Geometrix meets the FCC accuracy standards applying any/all of multiple weighting methods to carrier test data.